



# **Control-Based Mobile Ad Hoc Networking: Relevant Technologies at Sarnoff**

## **Presentation for CBMANET Proposer's Day Conference**

Jim Kaba

Sarnoff Corporation

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# MANET Protocols

- DAMAN – Deployable Adaptive Mobile Ad Hoc Network
  - DARPA SUO/SAS
  - Layer 2.5 approach optimized for highly dynamic environments
- Refined over multiple projects
  - DARPA, US Army, AFRL, commercial
  - Urban and Subterranean Communications, UAV Sense and Respond, Sensor Networking, Telemedicine, Peer-to-Peer Computing, Hot-Spot range extension
- Working implementation for 7 years
  - Application Areas: Voice, Video, Streaming and Bulk Data, Command and Control, Security, Service Discovery
  - Extensive optimized cross-layer integration with networking stack
  - Complete systems, Application layer to Physical Layer

# Other Related Technologies

- Intelligent Agent Mobile Ad Hoc Network Services
  - Model-based analysis and control of mobile node behavior
  - Behavior anomaly detection and classification, threat assessment, control of reaction/response
  - Security and Application-level models adaptable to network control
- Incentivised Cooperation in Ad Hoc Networks
  - Based on microeconomic mechanisms to stimulate/control behavior of ad hoc network nodes
- Software Defined Radio
  - 3+ years of system analysis and studies, radio and waveform hardware/software/system development
  - Embedded, small form factor, low power SDR platform
    - SCA-capable hardware and RTOS
    - Complete RF transceiver & digital modem

# Teaming Opportunities

- Partnering inquiries welcome
  - Prime contractor, sub contractor
  - Academia, Commercial, Gov.
  
- Administrative POC
  - Dave Zish, Sr. Business Development Director
  - dzish@sarnoff.com
  - (609) 734-2577
  
- Technical POC
  - Jim Kaba, Sr. Member of Technical Staff
  - jkaba@sarnoff.com
  - (609) 734-2246